

US EPA ARCHIVE DOCUMENT

ASANA . EUP

EEB
P BARCODE: D161221

CASE: 025046
SUBMISSION: S390604

DATA PACKAGE RECORD
BEAN SHEET

DATE: 02/11/91
Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: EUP (SECT 5) ACTION: 700 EUP NC N-F/F USE
CHEMICAL: 109303 S-Fenvalerate
ID#: 064595-EUP-R
COMPANY: U.S. FISH AND WILDLIFE SERVICE
PRODUCT MANAGER: 15 GEORGE LARocca 703-557-2400 ROOM: CM#2 204
PM TEAM REVIEWER: ROBERT RICHARDS 703-557-2401 ROOM: CM#2 204
RECEIVED DATE: 01/29/91 DUE OUT DATE: 05/29/91

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 161221 EXPEDITE: N DATE SENT: 02/11/91 DATE RET.: / /
DP TYPE: 001 Submission Related Data Package
ADMIN DUE DATE: 05/02/91 CSF: Y LABEL: Y
ASSIGNED TO DATE IN DATE OUT
DIV : LFED 02/14/91 4/17/91
BRAN: EEB / /
SECT: / /
REVR : / /
CONTR: / /

* * * DATA PACKAGE REVIEW INSTRUCTIONS * * *

Refer to attached note

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL
161222	IRB/PMT-17	02/11/91	05/02/91	Y	Y	Y
161224	IRB/IO	02/11/91	05/02/91	Y	N	N

100.0 Submission Purpose and Label Information

100.1 Submission Purpose

Patuxent Wildlife Research Center, Laurel, Maryland (U.S. Fish and Wildlife Service) is requesting an Experimental Use Permit (EUP) in order to apply ASANA XL directly to prairie wetlands in Minnesota. This is part of a research project for studying the impact of ASANA to aquatic invertebrate populations and any secondary effects to waterfowl (duckling) resulting from a decreased food base.

100.2 Formulation Information

Active Ingredients

Esfenvalerate	8.4%
Inerts.	<u>91.6%</u>
Total 100.0	

100.3 Application Rates/Methods/Directions

ASANA will be applied over five wetland basins (approximately 5 ha or 12 acres) by a licensed aerial applicator at the rate of 5.6 oz/acre (0.03 lb ai/A). Application (one) is expected to occur in late June 1991 and 1992.

100.4 Label Restrictions

Environmental Hazards: This pesticide is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water or wetlands (swamps, bogs, marshes and potholes). Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash waters.

101.0 Hazard Assessment

The purpose of this EUP is to develop a data base for a University of Minnesota, Master of Science Degree thesis. The objectives of the study are as follows: 1) Evaluate the effect of an insecticide-induced reduction in the aquatic invertebrate food base to Class 1-A mallard ducklings on prairie wetlands, and

2) Evaluate changes in aquatic and wetland-associated invertebrate populations following an insecticide-induced perturbation to their populations.

The request for an EUP is necessary in order to obtain EPA's permission for researchers to spray ASANA XL directly to water despite label instructions to the contrary. This application will occur once over five of the wetland basins (approximately 12 acres) by a licensed aerial applicator at the rate of 0.03 lb ai/A, in late June 1991 and again in June 1992.

101.1

Risk Assessment

EEB has approached the evaluation of this EUP in the following two parts: 1) potential impact to nontarget organisms, and 2) the adequacy of this study in supporting registration or providing significant information to evaluate the potential hazard of ASANA use to waterfowl in prairie wetlands.

In assessing pesticide impact to wildlife and aquatic organisms, EEB must consider toxicity, fate and the potential for exposure to non-target organisms. Therefore, the following issues have been considered: 1) fenvalerate¹, a second generation pyrethroid and predecessor to ASANA, appears to be relatively persistent in the aquatic environment with a half-life of about six months (anaerobic conditions), a hydrolysis of 24 days at pH 7.2 and a soil/water partition coefficient > 15000; 2) fenvalerate is very highly toxic to aquatic organisms ($LC_{50} = 0.008 - 5.3 \mu\text{g/L}$) but practically non-toxic to birds ($LC_{50} > 9000 \text{ ppm}$); and 3) Exposure through this EUP is limited to 12 acres and one application.

This information suggests that ASANA is relatively persistent in the environment and is highly toxic to aquatic organisms. However, the limited acreage and potential exposure that is proposed in this EUP suggests minimal risk to nontarget organisms in the overall pothole wetland area.

The second part of this assessment is to define the adequacy of this study in supporting registration or providing significant information to evaluate the potential hazard of ASANA use to waterfowl in prairie wetlands. EEB realizes that the intent of this research is to fulfill certain interests and objectives as defined by the Office of Fish and Wildlife, and not the needs of EPA. However, the EEB would like to go on

1/ fenvalerate data will be used to evaluate ASANA uses.

}

record for future reference, as stating that the results of this study design may not be useful for the Agency's risk assessment of ASANA for the following reasons: 1) although the proposal is brief, the experimental design appears to be very limited in sample size and may not have adequate sensitivity and power for showing a "no effect"; and 2) even if a change in duckling growth is demonstrated, as a result of a reduced food base during the two week observation period, it is difficult to extrapolate this information with regard to survival.

107.0

Conclusions

The intent of the EUP is to serve as a research project in studying the effects of an insecticide-induced reduction of an aquatic food base to mallard duckling growth in a prairie wetland and to evaluate changes in the aquatic invertebrate populations with regard to the respective pesticide exposure.

The EEB has evaluated this EUP request in the following two parts: 1) define potential impact to nontarget organisms and 2) discuss the adequacy of the study in providing significant information to evaluate the potential hazard of ASANA use to waterfowl in prairie wetlands.

In spite of the relative persistence of ASANA in an aquatic system, and the potentially significant adverse effects on nontarget aquatic organisms exposed to this treatment, the limited acreage that is proposed (12 acres) for exposure suggests minimal overall risk to nontarget organisms in the total pothole wetland area.

EEB realizes that the intent of this research is to fulfill certain interests and objectives as defined by the Office of Fish and Wildlife, and not the needs of EPA. However, EEB would like to go on record as stating that the results of this study may not fulfill the Agency's needs for developing an ASANA risk assessment for the prairie wetlands because of the following reasons: 1) the experimental design appears to be limited in sample size for adequate sensitivity and power, and may not show a no-effect, 2) even if a change in duckling growth is demonstrated, it is difficult to extrapolate this information with regard to survival.

Michael Rexrode, Fisheries Biologist
Ecological Effects Branch
Environmental Fate and Effects Division H7507C

Michael Rexrode
6/5/91

Daniel D. Rieder, Section III
Ecological Effects Branch
Environmental Fate and Effects Division H7507C

Daniel Rieder 6-5-91

for James Akerman, Chief
Ecological Effects Branch
Environmental Fate and Effects Division H7507C

James Akerman 6/6/91